



# Collection 5 Land Science Testing and Production

Mike Teague, SAIC

Nazmi Saleous, SAIC

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# Land Science Testing (1 of 3)

- Land science testing started in late September with the generation of the first 32-day Collection 4 baseline.
- To date we have run 6 planned science tests (4 Terra and 2 Aqua)
  - The Terra Level 1 and Cloud Mask codes have been approved and delivered to the GDAAC
  - We have also run 8 unplanned tests including an EPTOMS test, LSR destriping tests, and re-runs of the 32-day and Level 1 tests
  - The latest 32-day science test is presently under discipline review; 8- and 16-day products (including baseline) are available through the Land Archive and Distribution System (LADS)
  - The Aqua test for the Collection 5 Level 1 and Cloud Mask codes is presently under discipline review
  - We have presently tested 28 of the 49 PGEs expected to be used for the Collection 5 reprocessing
- Successful performance tests have been conducted with the NSIDC and EDC DAACS to establish that they can ingest data products at the expected MODAPS reprocessing production rates

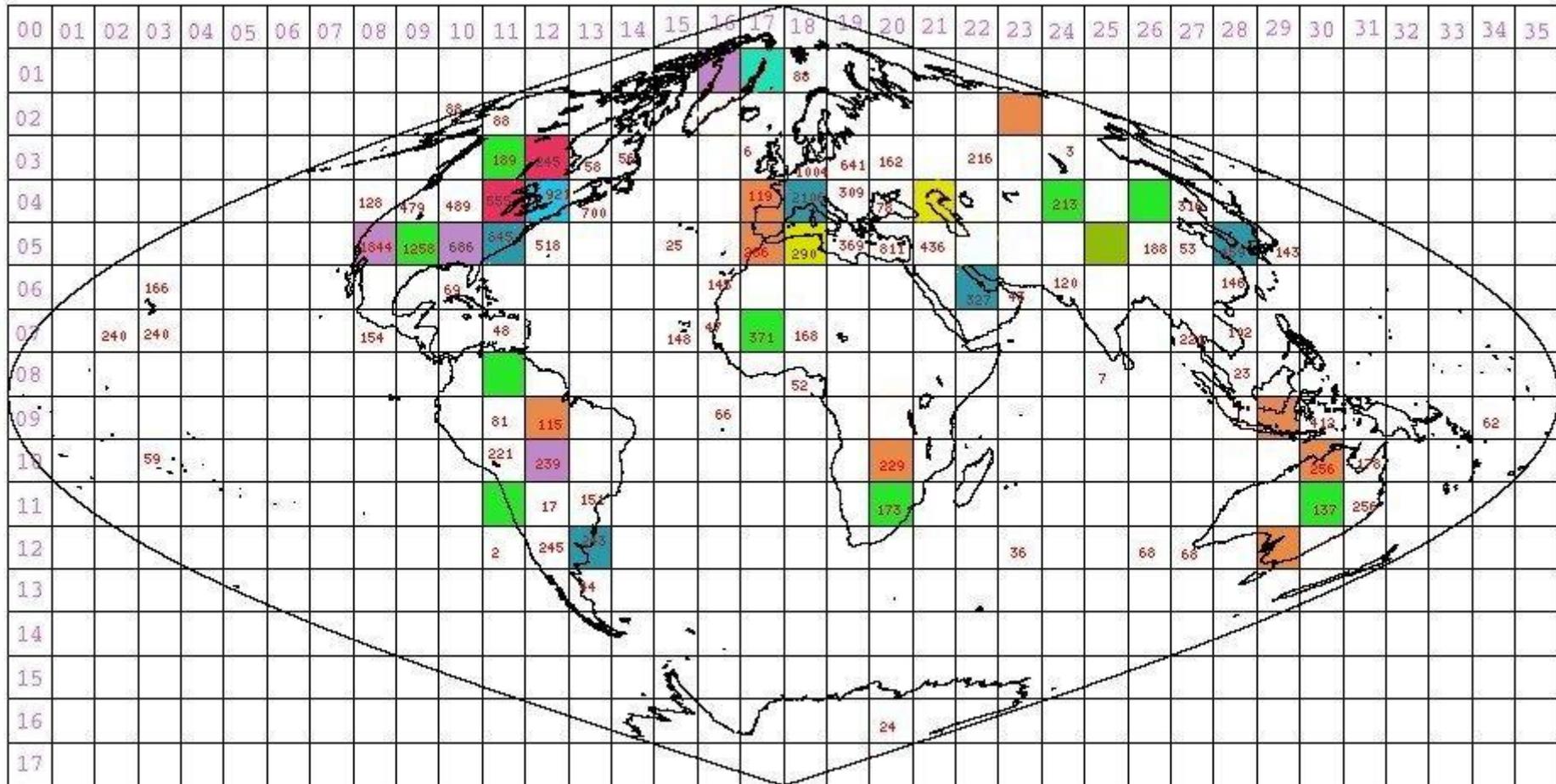


# Land Science Testing (2 of 3)

- 13 more Aqua (6) and Terra (7) tests are planned leading up to the Collection 5 reprocessing
- The next tests to be performed starting on a late April timeframe include:
  - A Validation test for comparison with Landsat scenes
    - This includes 1-2 tiles/day for 14 16-day intervals in 2001 and 2002
    - 8- and 16-day products will be generated
  - A 33-tile time series test for 2003
    - The delivery date for new codes for this test is NLT 4/16; it is possible that as many as 40 PGEs will be run in this test
    - This test will be run using L0 data as input
    - 8- and 16-day products will be generated
    - A baseline will be generated using, most likely, the Collection 5 codes from the latest 32-day test
    - The test is equivalent to approximately 35 datadays of tile products but requires the equivalent of 170 datadays of granule level data
    - The total data volume including input products and L1B exceeds 60TB; in order to maintain the data on disk internal compression (hrepack) will be applied



# Time series test tiles



- LDOPE's golden tiles
- Tiles selected by more than one SCF
- Other colors: Tiles selected by one SCF

Numbers: number of AERONET acquisitions in 2003



# Land Science Testing (3 of 3)

- The schedules for the remaining Terra and Aqua science tests are as follows:
  - Second Terra time series test starting 5/30
  - 32-day Aqua science test (including baseline) starting 6/17
  - Third Terra 32-day science test starting 7/3
  - Aqua patch test starting 7/21
  - Third Terra time series test starting 8/9
  - Aqua time series test (including baseline) starting 8/16
  - Final Terra patch test starting 9/14
  - Final Aqua patch test starting 9/18



# Collection 5 Land Reprocessing (1 of 4)

- Assuming that science testing of the Aqua and Terra land codes is completed by late September:
  - The Collection 5 land and atmospheres codes and the new land water mask will be loaded into forward processing on or around October 1, 2005
  - Collection 5 land reprocessing will begin October 1, 2005
  - Nearly 9 datayears will be reprocessed for Collection 5
- In order to ensure that a consistent data set is available for 2005 as quickly as possible, Aqua and Terra data for the interval January 1 through September 30, 2005 will be reprocessed first.
- Second, the remaining Aqua/Terra interval will be reprocessed
  - This will cover the interval from July 4, 2002 through December 31, 2004
  - Aqua and Terra data will be processed in parallel using two machines (mtvs2 and mtvs3) both of which have a 3.6-4x capacity
  - Data will be routinely copied between machines to facilitate generating combined products
  - This will allow the second machine to be used for Collection 6 science testing starting in September 2006



# Collection 5 Land Reprocessing (2 of 4)

- Third, the Terra-only interval from February 24, 2000 through July 3, 2002 will be reprocessed using a single machine.
- Production rule changes:
  - For Collection 4 the 16-day VI products are generated using the same boundaries for Aqua and Terra; for Collection 5 Aqua and Terra will be “staggered” by 8 datadays
  - For Collection 4 the 16-day 1km BRDF product is generated for Terra-only data and as a combined Terra/Aqua product; for Collection 5 the 1km product together with the new 500km product will be generated only on a combined basis. However, the product will be generated every 8 datadays using a “rolling” 16-day interval
  - Consideration is being given to generating a 4-day Terra/Aqua combined LAI/FPAR product.
- Operations:
  - Forward and reprocessing will be conducted with one attended shift (swings) per day; production will be accomplished using the unattended MODAPS system.
  - All land products will be generated from L0 data presently stored in the MODAPS archive



# Collection 5 Land Reprocessing (3 of 4)

- Schedule
  - Atmospheres Collection 5 reprocessing will start in early April 2005 and may overlap with land reprocessing by a few weeks; this is not expected to have a significant impact on the land reprocessing
    - We will be dynamically redistributing the linux minions between the three processing machines in an attempt to avoid this overlap
  - MODAPS performance tests have been conducted and 4x production rates have been measured on the two machines; with downtime allowance a 3.6x production rate/machine is assumed for the land reprocessing interval
  - A total of 8.85 datayears will be reprocessed for Collection 5 and the estimated completion date is mid-April, 2007
  - The 2005 interval January through September will be completed by mid-December 2005 and the entire datayear will be available very early in 2006
  - The entire Aqua/Terra interval will be completed by late August 2006
  - The interval July 4, 2002 through December 2003 will be reprocessed by mid-May 2006; at this time 5 datayears will be reprocessed (2.5 Aqua and 2.5 Terra)



# Collection 5 Land Reprocessing (4 of 4)

- GDAAC Production
  - All Terra L1 and Cloud Mask codes have been installed in GDAAC operations
  - The GDAAC will continue to generate Collection 4 products through (approximately) October 1, 2005
  - Collection 5 reprocessing has started for 2005 except for cloud mask which is waiting for the delivery of reprocessed NISE data from NSIDC
    - This data set is expected in the next few days
  - GDAAC production is expected to proceed at approximately 4x and Collection 5 reprocessing will be completed prior to May 2007